AMENDMENTS TO THE CLAIMS:

Amend the claims as follows:

Claim 1. (Canceled)

2. (Currently Amended) A vaccine comprising an immunoretroid form of an immunologically active peptide, said immunoretroid being a derivative of said peptide which binds to an antibody or an antibody fragment to said peptide with at least an equal affinity as said peptide; wherein said immunoretroid form is a retro-inverso peptide or a retro-peptide of a peptide, wherein said immunoretroid form of said peptide has the following formula II:

$$A\text{-}CH(R_i)\text{-}NH\text{-}[CO\text{-}CH(R_k)\text{-}NH]_{j\text{-}i}\text{-}CO\text{-}CH(R_{j+1})\text{-}B \quad (II)$$

wherein

n, which is the number of aminoacyl residues in formula II~~formula I~~, is 20~~a whole number from 3-1,000~~, and R_i , R_k, and R_{j+1} are side chains of the aminoacyl residues,

i, j and k are whole numbers

wherein $1 \leq i \leq j < n$, and

if i=j, k=0; and

if $i < j$, $i + 1 \leq k \leq j$;

such that,

where $i = 1$ and $j + 1 = n$, A is Q and B is M;

where $i = 1$ and $j + 1 \neq n$, A is Q and B is L;

where $i \neq 1$ and $j + 1 = n$, A is T and B is M; and

where $i \neq 1$ and $j + 1 \neq n$, A is T and B is L;

Q being selected from the group consisting of H-, H_2N-, P-HN-, RR'N-, H_2NCO-, RR'NCO-, RCO-;

M being selected from the group consisting of H-, -COOH, -COOR, -$CONH_2$, -CONRR' and -NHCOR;

L being -CO-NH-CH(R_{j+2})-CO-...-NH-CH(R_n)-CO-Y

wherein Y is selected from the group consisting of -OH, -OR, -NH_2, and -NRR'; and

T being X-HN-CH(R_1)-CO-...-NH-CH(R_{i-1})CO-NH-

wherein X is selected from the group consisting of H-, P-, R- and RCO-;

wherein

R and R' are independently selected from the group consisting of hydrogen, C_{1-25} alkyl, C_{3-25} allyl, C_{6-25} aryl, benzyl, 2-phenyl-ethyl, methyl-fluorenyl, glycolamide and benzhydrylglycolamide; and

P is a protecting group; and

and wherein said immunoretroid form is a retro-inverso peptide or a retro-peptide of a peptide selected from the group consisting of

FP peptide of serotype A12 of foot-and-mouth disease virus,

FL peptide of serotype A12 of foot-and-mouth disease virus,

SL peptide of serotype A12 of foot-and-mouth disease virus,

said vaccine further comprising a physiologically acceptable vehicle.

Claims 3-5. (Canceled)

6. (Original) The vaccine of claim 2 wherein said immunoretroid form of said immunologically active peptide is bound to a liposome.

7. (Original) The vaccine of claim 2 further comprising an adjuvant.

Claims 8-14. (Canceled)

15. (Original) A vaccine of claim 2 wherein R and R' are independently selected from the group consisting of methyl, ethyl, isopropyl, tert-butyl and phenyl.

16. (Original) A vaccine of claim 2 wherein P is selected from the group consisting of tert-butyloxycarbonyl, fluorenylmethyloxycarbonyl, benzyloxycarbonyl, and allyloxycarbonyl.

17. (Original) A vaccine of claim 7 wherein R and R' are independently selected from the group consisting of methyl, ethyl, isopropyl, tert-butyl and phenyl.

18. (Original) A vaccine of claim 7 wherein P is selected from the group consisting of tert-butyloxycarbonyl, fluorenylmethyloxycarbonyl, benzyloxycarbonyl, and allyloxycarbonyl.

Claims 19-25. (Canceled)

26. (new) A composition comprising an immunoretroid form of a peptide selected from the group consisting of FP peptide of serotype A12 of foot-and-mouth disease virus, FL peptide of serotype A12 of foot-and-mouth disease virus, and SL peptide of serotype A12 of foot-and-mouth disease virus, said immunoretroid being a derivative of said peptide which binds to an antibody or an antibody fragment to said peptide with at least an equal affinity as said peptide; wherein said immunoretroid form is a retro-inverso peptide or a retro-peptide of a peptide, wherein said immunoretroid form of said peptide has the following formula II:

$$A\text{-}CH(R_i)\text{-}NH\text{-}[CO\text{-}CH(R_k)\text{-}NH]_{j\text{-}i}\text{-}CO\text{-}CH(R_{j+1})\text{-}B \quad (II)$$

wherein

n, which is the number of aminoacyl residues in formula II, is 20, and R_i , R_k, and R_{j+1} are side chains of the aminoacyl residues,

i, j and k are whole numbers

wherein $1 \leq i \leq j < n$, and

if i=j, k=0; and

if $i < j$, $i + 1 \leq k \leq j$;

such that,

where $i = 1$ and $j + 1 = n$, A is Q and B is M;

where $i = 1$ and $j + 1 \neq n$, A is Q and B is L;

where $i \neq 1$ and $j + 1 = n$, A is T and B is M; and

where $i \neq 1$ and $j + 1 \neq n$, A is T and B is L;

Q being selected from the group consisting of H-, H_2N-, P-HN-, RR'N-, H_2NCO-, RR'NCO-, RCO-;

M being selected from the group consisting of H-, -COOH, -COOR, -$CONH_2$, -CONRR' and -NHCOR;

L being -CO-NH-CH(R_{j+2})-CO-...-NH-CH(R_n)-CO-Y

wherein Y is selected from the group consisting of -OH, -OR, -NH_2, and -NRR'; and

T being X-HN-CH(R_1)-CO-...-NH-CH(R_{i-1})CO-NH-

wherein X is selected from the group consisting of H-, P-, R- and RCO-;

wherein

R and R' are independently selected from the group consisting of hydrogen, C_{1-25} alkyl, C_{3-25} allyl, C_{6-25} aryl, benzyl, 2-phenyl-ethyl, methyl-fluorenyl, glycolamide and benzhydrylglycolamide; and

P is a protecting group;

said composition further comprising a diluent.

27. (new) A composition comprising an immunoretroid form of a peptide selected from the group consisting of FP peptide of serotype A12 of foot-and-mouth disease virus, FL peptide of serotype A12 of foot-and-mouth disease virus, and SL peptide of serotype A12 of foot-and-mouth disease virus, said immunoretroid being a derivative of said peptide which binds to an antibody or an antibody fragment to said peptide with at least an equal affinity as said peptide; wherein said immunoretroid form is a retro-inverso peptide or a retro-peptide of a peptide, wherein said immunoretroid form of said peptide has the following formula II:

A-CH(R_i)-NH-[CO-CH(R_k)-NH]$_{j-i}$-CO-CH(R_{j+1})-B (II)

wherein

n is 20,

i is a whole number in the range of 1-19,

j is a whole number in the range of 1-19,

k is 0 or whole number in the range of 2-19,

and R_i , R_k, and R_{j+1} are side chains of the aminoacyl residues of said SEQ ID NO:7, SEQ ID NO:8 or SEQ ID NO:9,

wherein $1 \leq i \leq j < n$, and

if i=j, k=0; and

if $i < j$, $i + 1 \leq k \leq j$;

such that,

where $i = 1$ and $j + 1 = n$, A is Q and B is M;

where $i = 1$ and $j + 1 \neq n$, A is Q and B is L;

where $i \neq 1$ and $j + 1 = n$, A is T and B is M; and

where $i \neq 1$ and $j + 1 \neq n$, A is T and B is L;

Q being selected from the group consisting of H-, H_2N-, P-HN-, RR'N-, H_2NCO-, RR'NCO-, RCO-;

M being selected from the group consisting of H-, -COOH, -COOR, -$CONH_2$, -CONRR' and -NHCOR;

L being -CO-NH-CH(R_{j+2})-CO-...-NH-CH(R_n)-CO-Y

wherein Y is selected from the group consisting of -OH, -OR, -NH_2, and -NRR'; and

T being X-HN-CH(R_1)-CO-...-NH-CH(R_{i-1})CO-NH-

wherein X is selected from the group consisting of H-, P-, R- and RCO-;

wherein

R_1 is CH_2SH, R_2 is H, R_3 is CH_2OH, R_4 is H, R_5 is $CH(CH_3)_2$, R_6 is $(CH_2)_3NHC(NH)NH_2$, R_7 is H, R_8 is CH_2COOH, R_9 is $CH_2(C_6H_5)$ or CH_2OH, R_{10} is H, R_{11} is CH_2OH, R_{12} is $CH_2CH(CH_3)_2$, R_{13} is CH_3, R_{14} is C_3H_6 or $CH_2CH(CH_3)_2$, R_{15} is $(CH_2)_3NHC(NH)NH_2$, R_{16} is $CH(CH_3)_2$, R_{17} is CH_3, R_{18} is $(CH_2)_3NHC(NH)NH_2$, R_{19} is $CH_2CH_2C(O)NH_2$ and R_{20} is $CH_2CH(CH_3)_2$,

R and R' are independently selected from the group consisting of hydrogen, $C_{1\text{-}25}$ alkyl, $C_{3\text{-}25}$ allyl, $C_{6\text{-}25}$ aryl, benzyl, 2-phenyl-ethyl, methyl-fluorenyl, glycolamide and benzhydrylglycolamide;

P is a protecting group;

said composition further comprising a diluent.

28. (new) The composition of claim 26 or claim 27 wherein said immunoretroid form of said immunologically active peptide is bound to a liposome.

29. (new) The composition of claim 26 or claim 27 further comprising an adjuvant.

30. (new) The composition of claim 26 or claim 27 wherein R and R' are independently selected from the group consisting of methyl, ethyl, isopropyl, tert-butyl and phenyl.

31. (new) A composition of claim 26 or claim 27 wherein P is selected from the group consisting of tert-butyloxycarbonyl, fluorenylmethyloxycarbonyl, benzyloxycarbonyl, and allyloxycarbonyl.

32. (new) The composition of claim 29 wherein R and R' are independently selected from the group consisting of methyl, ethyl, isopropyl, tert-butyl and phenyl.

33. (new) The composition of claim 29 wherein P is selected from the group consisting of tert-butyloxycarbonyl, fluorenylmethyloxycarbonyl, benzyloxycarbonyl, and allyloxycarbonyl.